

AMENDMENTS TO THE CLAIMS

This listing of claims will replace all prior versions and listings of claims in the application:

LISTING OF CLAIMS:

1. (original): A method for setting a firing temperature of cerium carbonate which is to be fired to produce a cerium oxide abrasive, wherein the cerium carbonate has a fluorine content falling within a range of 10 to 500 ppm by mass and the firing temperature is set in accordance with the fluorine content.

2. (original): The method for setting a firing temperature of cerium carbonate according to claim 1, wherein said firing temperature is set from the following formula:

$$T = (700 + A) - B[\log (F)]$$

where T denotes the firing temperature (°C) of cerium carbonate to be fired, F denotes the fluorine content (ppm by mass) of cerium carbonate to be fired, and A and B are constants inherent to a firing furnace and a temperature elevation condition used in said firing, said constants being obtained from the following formulae:

$$T1 = (700 + A) - B[\log (F1)]$$

$$T2 = (700 + A) - B[\log (F2)]$$

where T1 and F1, and T2 and F2, are optimum firing temperatures (°C) and fluorine contents (ppm by mass), respectively, of two cerium carbonates different in fluorine content and predetermined of their optimum firing temperatures.

3. (original): A method for producing a cerium oxide abrasive comprising firing a raw material of cerium carbonate, in which the temperature of said firing is set in accordance with the method as set forth in claim 1 or 2.

4. (original): A method for producing a cerium oxide abrasive, characterized in that the method comprises firing a raw material of cerium carbonate having a fluorine content F (ppm by mass) falling within a range of 10 to 500 ppm by mass, at a firing temperature T (°C) selected within a temperature range defined by the following formula:

$$730 - 14[\log(F)] \leq T \leq 790 - 10[\log(F)].$$

5. (currently amended): The method for producing a cerium oxide abrasive according to claim 3 ~~or~~ 4, wherein the cerium carbonate has a fluorine content falling within a range of 50 to 300 ppm by mass.

6. (currently amended): The method for producing a cerium oxide abrasive according to ~~any one of claims 3 to 5~~ claim 3, further comprising removing soluble fluorine from the cerium oxide abrasive.

7. (currently amended): Cerium oxide abrasive ~~referred to~~ produced through the method as set forth in ~~any one of claims 3 to 5~~ claim 3, wherein the cerium oxide abrasive ~~referred to~~ contains soluble fluorine in an amount falling within a range of 20 to 1000 ppm by mass based on the mass of the cerium oxide.

8. (currently amended): The cerium oxide abrasive ~~referred to~~ according to claim 7, wherein the cerium oxide abrasive ~~referred to~~ comprise cerium oxide abrasives having a specific surface area falling within a range of 9.5 to 12.2 m²/g.

9. (currently amended): A cerium oxide abrasive slurry comprising cerium oxide, water and a dispersant capable of dispersing cerium oxide, wherein said cerium oxide is obtained from the cerium oxide abrasive ~~referred to~~ as set forth in claim 7 ~~or 8~~.

Preliminary Amendment
Based on PCT/JP2004/010592

10. (currently amended): A method for producing a cerium oxide abrasive slurry, comprising the method for producing a cerium oxide abrasive as set forth in ~~any one of claims 3 to 6~~claim 3.

11. (new): The method for producing a cerium oxide abrasive according to claim 4, wherein the cerium carbonate has a fluorine content falling within a range of 50 to 300 ppm by mass.

12. (new): The method for producing a cerium oxide abrasive according to claim 4, further comprising removing soluble fluorine from the cerium oxide abrasive.

13. (new): Cerium oxide abrasive rods produced through the method as set forth in 4, wherein the cerium oxide abrasive rods contain soluble fluorine in an amount falling within a range of 20 to 1000 ppm by mass based on the mass of the cerium oxide.